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High α alphas-olefin dimerisation - using mixt. of tetra:alkoxy or
b nzyloxy zirconium and di:alkoxy aluminium chloride

23.04.79 as 775069 (1511VE)

Dimers of higher (6-10C) linear alpha-olefines by dimerisation of
the corresp. alpha-olefins, using complex catalyst comprising Zr
(OR)₄, (where R is Et, Bu, benzyl (PhCH₂), and AlR₃Cl₂, (where
R is Et, Bu in 1:18-25) molar ratio respectively at 20-200 deg.C.
Benzene, toluene, or methylene chloride were used as solvents.

These cpds. are used in petrochemical industry to obtain
detergents capable of undergoing bio-degradation, emulsifiers,
higher mercaptans and lubricants. (2pp)

Example

A soln. contg. 0.383g Zr(OCH₃)₄ and 1.76g AlEt₂Cl in 20 ml.
toluene and 84g hexene-1 was placed in autoclave filled with Ar,
and the mixt. was stirred for 48h. at 20 deg.C The catalyst was
decomposed with alcohol and the prods. were distilled in vacuo.
The molecular mass was detnd. by mass spectrometry. The yield
of dodecenes was 70%, b.p. 80-85 deg.C, at 5mm. Hg.p. Depending
on the quant. of catalyst temp. and time of the reaction, other
prods. obtd. analogously were: octadecene, hexadecene,
tricosene, decene-1, Bu₁. 1/7.1.81.